

SYSTEM SUPPORT DIRECTIVE

ASR-9

6310

SSM-ASR9-003

System Support Modification

REMOVAL OF CIRCUIT BREAKERS FROM MODEM RACK

HIGHLIGHTS

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October 19, 1999

1. PURPOSE.

- a. This System Support Modification (SSM) authorizes a modification to the Airport Surveillance Radar-9 (ASR-9) modem rack. The purpose of the modification is to remove the cabinet circuit breakers to eliminate outages due to the circuit breakers accidentally opening.
- b. THESE CHANGES HAVE BEEN REVIEWED AND EVALUATED FOR IMPACTS UPON Year 2000 (Y2K) FUNCTIONALITY AND HAVE NO DETRIMENTAL EFFECT UPON Y2K COMPLIANCE ISSUES.

2. **DISTRIBUTION.** This directive is distributed to selected field offices and services within Washington headquarters, regional Airway Facilities divisions, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, and the Airway Facilities offices having the following facilities/equipment: ASR-9.

3. **WITHDRAWALS/CANCELLATIONS.** Not applicable.

4. **REFERENCES.** Configuration Control Decision (CCD) N20889.

5. **BACKGROUND.** The ASR-9 modem rack has a history of full facility outages associated with accidental circuit breaker tripping.

6. **APPLICATION.** This modification is applicable to all ASR-9 sites.

7. MATERIALS REQUIRED.

- a. The materials required to perform this modification will be provided in the form of a modification kit. This kit, NSN 0000-00-012-1511, consists of the following items:

DISTRIBUTION: Selected Airway Facilities Field
and Regional Offices

INITIATED BY: AOS-270

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>NSN/PART NUMBER</u>	<u>QUANTITY</u>
a.	Face Plate		1 ea.
b.	6-32 Screws		5 ea.
c.	6-32 Nuts		5 ea.
d.	6-32 Flat Washers		10 ea.
e.	6-32 Lock Washers		5 ea.
f.	Caution Label		2 ea.
g.	Wire Markers (Heat Shrinkable)		4 ea.

- b. Facilities will need to order one kit per modem cabinet. For example, a facility that is providing dual remote data will need to order 3 kits (1 for local modem unit 12, 1 for local unit 13 [provides data to dual remote] and 1 for remote modem unit 22). The facility in charge of the dual remote (remote modem unit 23) will need to order 1 kit.

- 8. SOURCE OF MATERIALS.** The materials required to perform this modification will be supplied as a kit (NSN 0000-00-012-1511) by the FAA Logistics Center for issue to the sites. Personnel should follow the normal procedures for requesting these items from the FAA Logistics Center. If problems arise in receiving the kit, site personnel should contact NAS section AML-622 directly by telephoning (405) 954-4421.

- 9. SPECIAL TOOLS AND TEST EQUIPMENT REQUIRED.** The following tools and test equipment are required to complete this modification on an ASR-9 type system:

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>PART NUMBER</u>
a.	Multimeter		
b.	Small Wire Cutters		
c.	Medium Flathead Screwdriver		
d.	Medium Phillips Screwdriver		
e.	Needlenose Pliers		
f.	Heat Gun		
g.	Drift Pin		

- 10. PROCEDURE TO BE PERFORMED BY.** This modification is to be performed by field maintenance personnel or as determined by the Regional Airway Facilities division manager.

- 11. WHEN MODIFICATION IS TO BE PERFORMED.** This modification is to be performed as soon as possible after receipt of this modification and the required materials.

- 12. ESTIMATED TIME REQUIRED.** This procedure will require 1 technician for 2 employee-hours.
- 13. DISPOSITION OF SURPLUS PARTS.** Retain surplus parts in site stock.
- 14. PROCEDURE.** The ASR-9 will be out-of-service during the installation and testing of this modification. Both the local and remote cabinets will be modified. The following procedures should be followed for this modification:

NOTE: Coordinate the system downtime with the Air Traffic Control (ATC) supervisor.

- a. Follow the power down procedures for the modem rack in the ANS 185 Diagnostically Controlled Modem System Manual, page 3-10.
- b. At the GFE power panel, turn off circuit breakers to the modem rack and to the modem heater.
- c. On page 1-6, Figure 1-2, Racal-Milgo ANS 185, locate circuit breakers CB1 and CB2. Remove the metal panel located on top of the cabinet right above CB1 and CB2 and also the large rectangular plate to gain access to the two circuit breakers and the line filters FL1 and FL2. Use a multimeter to verify there is no voltage to the modem rack (TB1-01 [Hot] and TB1-02 [Neutral]) or the modem heater (TB2-01 [Hot] and TB2-02 [Neutral]). (TB1 and TB2 are located under the large plate between the filters and the circuit breakers.)

CAUTION: Remove AC Power from both the modem breaker and the modem heater breaker located at the GFE power panel before servicing equipment.

- d. Gain access to the wires going from TB1 and TB2 to both the circuit breakers and the line filters FL1 and FL2 by cutting the tie wraps holding them together.
- e. Using the needlenose pliers, remove the black wire from CB1-1 by pulling the lug straight off the terminal.
- f. Using the needlenose pliers, remove the black wire from FL1-3 by pulling the lug straight off the terminal. Remove this wire from the rack and discard it.
- g. Using the needlenose pliers, remove the black wire from CB1-3 by pulling the lug straight off the terminal. Remove the wire marker CB1-3 and replace it with the wire marker FL1-3. Place this wire on the lug at FL1-3. (This label will fit loosely around wire).
- h. Using the needlenose pliers, remove the white wire from CB1-2 by pulling the lug straight off the terminal.
- i. Using the needlenose pliers, remove the white wire from FL1-4 by pulling the lug straight off the terminal. Remove this wire from the rack and discard it.
- j. Using the needlenose pliers, remove the white wire from CB1-4 by pulling the lug straight off the terminal. Remove the wire marker CB1-4 and replace it with the wire marker FL1-4. Place this wire on the lug at FL1-4. (This label will fit loosely around wire).
- k. Using the needlenose pliers, remove the black wire from CB2-1 by pulling the lug straight off the terminal.

- l. Using the needlenose pliers, remove the black wire from FL2-3 by pulling the lug straight off the terminal. Remove this wire from the rack and discard it.
- m. Using the needlenose pliers, remove the black wire from CB2-3 by pulling the lug straight off the terminal. Remove the wire marker CB2-3 and replace it with the wire marker FL2-3. Place this wire on the lug at FL2-3. (This label will fit loosely around wire).
- n. Using the needlenose pliers, remove the white wire from CB2-2 by pulling the lug straight off the terminal.
- o. Using the needlenose pliers, remove the white wire from FL2-4 by pulling the lug straight off the terminal. Remove this wire from the rack and discard it.
- p. Using the needlenose pliers, remove the white wire from CB2-4 by pulling the lug straight off the terminal. Remove the wire marker CB2-4 and replace it with the wire marker FL2-4. Place this wire on the lug at FL2-4. (This label will fit loosely around wire).
- q. Dress wires with tie wraps.
- r. Remove the circuit breakers from the modem rack. (Remove breakers by first removing pin between switch arms of the circuit breaker).
- s. With the enclosed hardware, secure the faceplate over the two holes where the circuit breakers were removed.
- t. Replace the two metal plates removed in paragraph 14c. On the larger rectangular plate attach supplied caution label. Locate the second caution label in the center of rear door of the modem rack A7 15 inches to 18 inches below the top of the cabinet.
- u. Restore power to the modem rack and the modem heater at the GFE power panel.
- v. Follow the new normal power-up procedure, page 3-10 in the ANS 185 Diagnostically Controlled Modem System Manual change pages.
- w. Follow paragraphs 14a through 14w for each modem rack.

15. TESTS AFTER MODIFICATION. Not applicable.

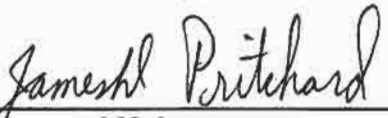
16. RESULT OF MODIFICATION. This modification will protect the ASR-9 from loss of data transmission due to false tripping of the modem circuit breakers. The equipment is protected sufficiently at the GFE power panel.

17. CHANGES TO INSTRUCTION BOOKS. Two sets of page changes are attached. One set is to remain with the directive and the other set is to be inserted in the manual as instructed by the page control chart.

18. CHANGES TO INSTALLATION DRAWINGS. Not applicable.

19. CHANGES TO RECORDED DATA. Prepare FAA Form 6032.1, Airway Facilities Modification Record, showing this directive number, date, and sequence number to change recorded date.

- 20. ADDRESS CHANGES.** Submit facility address, directive copy count, and additions or deletions via cc:Mail to Pat Conner, AOS-530.
- 21. CLARIFICATION OR COMMENTS.** Forward any recommendations for changes to this directive through normal channels to the National Airways Systems Engineering Division, AOS-200.
- 22. STATUS ACCOUNTING.** Perform both the following status accounting activities:
- Ensure that the Quarterly NAS Equipment and SSM Status report is updated to indicate the installation of this modification.
 - Use the Maintenance Management System (MMS) application Log Equipment Modification (LEM) function to report the completion of this modification. Verify that an **N** is in the **REP COD** field to ensure that the log entry will be upwardly reportable to the national data base for access by AOS. This directive should be entered into the LEM fields as follows:
 - Order No.: [Enter SSD Order No.]
 - Chapter: **SSM003**
 - Change: **HW**
- 23. RECOMMENDATIONS FOR CHANGES.** Forward any recommendations for changes to this directive through normal channels to the National Airways Systems Engineering Division, AOS-200.


Raymond M. Long
Program Director for Operational Support

10/18/99
Date

LIST OF APPENDIXES AND ATTACHMENTS		
ITEM	DESCRIPTION	QUANTITY
ATTACHMENT	RACAL-MILGO ANS 185 DIAGNOSTICALLY CONTROLLED SYSTEM MANUAL	

